

**LAWRENCE LIVERMORE**  
**REPORT**

A weekly collection of scientific and technological achievements from  
Lawrence Livermore National Laboratory: Dec. 15-Dec. 22, 2008.

**Hydrogen sensor research appears in *Advanced Materials***



A Lab research paper, just published in *Advanced Materials*, describes research on a nanoparticle-based hydrogen sensor developed under the Laboratory Directed Research and Development (LDRD) Transformational Materials Initiative project.

Highlighted earlier by *Nature Materials*, the paper describes an optical sensing strategy, and prototype, using palladium. The porous nanostructure eliminates issues with previous optical hydrogen sensors, such as long response times or metal film cracking. Other desirable features include better optical transparency and a shorter required waveguide-gas interaction length.

The paper is by Don Sirbully, Sonia Letant and Tim Ratto of LLNL's Chemical Sciences Division.

To read more, go to <http://www3.interscience.wiley.com/cgi-bin/fulltext/121392485/PDFSTART>

**LLNL's APDS team targets an expanded role in BioWatch**



**The team members who have developed and advanced the Autonomous Pathogen Detection System.**

LLNL is taking the next step in expanding the role of the Autonomous Pathogen Detection System (APDS) in BioWatch by partnering with Northrop Grumman Security Systems, LLC (NGSS) and Luminex Corporation of Austin, Texas to submit a proposal to the Department of Homeland Security, which, if accepted, would allow APDS to participate in the BioWatch Gen-3 competition.

The Gen-3 competition will identify the technologies and systems that will be deployed in the next generation of BioWatch detection.

These systems are deployed in urban locations such as subways and stadiums.

### **Lab researchers elected to AAAS and APS**



**Edward Moses and Don Correll**

Lab researchers Don Correll and Edward Moses have been named fellows of the American Association for the Advancement of Science (AAAS).

Correll is honored for his "long-standing recognition and distinguished contributions to science education, including communications and materials targeted toward students, teachers and the general public." Moses is honored for his "distinguished scientific and engineering contributions leading to development and construction of the world's largest and most energetic laser system, the National Ignition Facility."

Also, researchers Andrew MacKinnon and Per Söderlind were named 2008 fellows of the American Physical Society (APS).

MacKinnon was honored for "pioneering experimental studies of interactions of intense laser pulses with matter and in particular, the physics and applications of short-pulse laser-driven proton beams." He has been at the Lab since 1999. Söderlind was honored for "important contributions in electronic-structure theory for transition and actinide metals, particularly plutonium." He has been at the Lab since 1994

To read more, go to <https://newsline.llnl.gov/rev02/articles/2008/dec/12.19.08-aaas.php> and <https://newsline.llnl.gov/rev02/articles/2008/dec/12.12.08-aps.php>

## **Lab collects 100 boxes of food for Open Heart Kitchen**



**Linda McKeever, executive director of the Open Hearth Kitchen (left), thanks Ed Moses and Kim Jordan of NIF.**

Laboratory employees donated 100 boxes of food for Livermore's Open Heart Kitchen. The Lab-wide food drive was organized by employees working at the National Ignition Facility.

Open Heart Kitchen's mission is to provide free meals to the needy people of the Tri-Valley area. Open Heart Kitchen offers the only free hot meal service of its kind in the area. The kitchen offers a three meal program including hot meals, weekend box lunches and hot meals for seniors.

The kitchen serves about 3,500 meals per week.

For more information, go to <http://www.openheartkitchen.org/>

### **Latest edition of weekly *Newsline* available**



*Newsline* provides the latest Lab research and operations news.

See the most recent issue at <https://newsline.llnl.gov/rev02/index.php>

### **The *Livermore Lab Report* takes a break**



The Livermore Lab Report will take a break for the holidays. The report will return Jan. 12.

### **Photo of the week**



**A brighter holiday -- Laboratory employees donated gifts and household goods to underprivileged families last week as part of the Laboratory's Brighter Holidays campaign.**

----

LLNL is managed by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy's National Nuclear Security Administration.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

To send input to the Livermore Lab Report, send e-mail <mailto:labreport@llnl.gov>.

The Livermore Lab Report archive is available at:  
[https://publicaffairs.llnl.gov/news/lab\\_report/2008index.html](https://publicaffairs.llnl.gov/news/lab_report/2008index.html)